

### **Remarks**

Reconsideration of the subject application is requested in view of the foregoing amendments and the following remarks.

Claims 1-41 were the subject of the Office action. In this paper, claims 13 and 30 are amended solely to correct readily discernible typographical errors noted by the Examiner and not for reasons related to patentability. Claims 34-41 were withdrawn from consideration as a result of a previous restriction.

Applicant appreciates the search performed by the Examiner in connection with substantively examining the claims.

### **Rejections under 35 U.S.C. § 112, 2nd paragraph**

The Office action appears to contend that claims 1, 6, and 24 are drawn to distillation systems. This contention is incorrect. The preambles of claims 1, 6, and 24 include the phrase “a distillation system,” but the phrase merely sets forth the context of what these claims are actually drawn to, namely *a distillation pot*. The respective preamble of each of claims 1, 6, and 24 recites “*In a distillation system, a distillation pot.*” (Emphasis added.) The body of each claim recites a respective combination of features of the subject distillation pot. A condenser is part of a distillation system, not a distillation pot. Therefore, including a condenser in each of these claims is not required.

Claim 26 stands rejected on similar grounds. Claim 26 is drawn to a distillation system. However, the Examiner has apparently overlooked the fact that claim 26 does indeed recite a combination of an evaporator (“a distillation pot”) and a condenser (“a condensing unit”).

The Office action also contends that certain elements of claims 1, 6, 24, and 26 “are not positively recited as structures.” In reply, Applicant points out that these claims do, in fact, recite the subject elements as positive structures. For example, claim 1 recites “walls, including a heated wall, and a cover that collectively define an interior space . . . ; a plate configured and situated in the interior space so as to divide the space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate; and a thermally conductive member extending from a location on an inside surface of a wall into the liquid . . . .” All of these, as well as other recitations in the

claim are positive structures. If the Examiner disagrees, then clarification (including an explanation of and citation of authority as to why they allegedly are not positive structures) is requested. By further example, claim 6 recites “walls, including a heated wall, and a cover that collectively define an interior space . . . ; a reflux plate configured and situated in the interior space so as to have a vertical portion and a sloped portion including a lower end and a higher end . . . ; and a thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured to be contacted by the liquid . . . ; the peripheral edges of the sloped portion are sealingly attached to respective inside surfaces of the walls so as to divide the interior space into an upper portion and a lower portion that communicate with each other via the higher end and the lower end . . . ; the vertical portion extends upward from the higher end relative to a respective inside surface, the reflux vent opening in the interior space beneath the cover to provide said communication from the lower portion to the upper portion . . . .” Again, all of these, as well as other recitations in the claim are positive structures. Claims 24 and 26 are also filled with positive-structural recitations. If the Examiner disagrees, then an explanation of specifically what language the Examiner would rather see is requested. In this regard, it is pointed out that mere stylistic differences between the Applicant's claims and the Examiner's suggestions are normally not grounds for a requirement that the claims be written in the manner preferred by the Examiner.

The Office action also contends that claims 1, 6, 24, and 26 “are replete with . . . functional or operational language.” This contention is traversed. First, the claims in fact are not “replete” with such language, which would be revealed by a simple reading of the subject claims. Second, there is no law prohibiting functional or operational language in a claim. (If the Examiner disagrees, then a citation to authority is requested.) Specifically, “[t]here is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper.” M.P.E.P. §2173.05(g). For example, claim 1 recites that the upper portion and lower portion “hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway.” This and all other functional claim limitations “must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” *Id.* Applicant requests that claims 1, 6, 24, and 26 receive such evaluation and consideration.

With respect to claim 24, the Office action expressly notes that “means plus function” is authorized by 35 U.S.C. §112, 6th paragraph, so the specific fault with claim 24 is not understood. Clarification is requested.

Therefore, the contentions in the Office action pertaining to this rejection appear to be misplaced, and withdrawal of the rejection is requested.

Although not in the context of a rejection, the Office action contends that the “wherein” clauses in claims 1, 24, and 25 “do not define any elements” and that they “cannot be distinguished structurally.” In reply, Applicant points out that “wherein” clauses need not define elements to be structurally distinguishable. For example, in *Griffin v. Bertina*, 289 F.3d 1029 (Fed. Cir. 2002), the Federal Circuit affirmed “giving limiting effect” to “wherein” clauses because they relate back to and clarify what is required by an element of the claim. The “wherein” clauses in claims 1, 24, and 25 similarly relate back to and clarify the “thermally conductive member” in claims 1 and 25 and the “thermal-conduction means” in claim 24. Because the “wherein” clauses in claims 1, 24, and 25 relate back to and clarify previously introduced elements, these clauses should be given their due effect.

Claims 13 and 30 are amended herein to remove an extra word “that” in each of these claims. The Examiner pointing out the errors is appreciated. It will be readily understood that the amendments to these claims are merely to correct typographical errors and were not made for any reasons pertaining to patentability. Therefore, Applicant has not surrendered any scope of equivalents under the *Festo* line of cases.

In view of the foregoing, the rejections under 35 U.S.C. §112 should be withdrawn, and action to such end is requested.

#### **Rejections under 35 U.S.C. § 103(a)**

Claims 1-5 and 24-25 stand rejected for alleged obviousness from Westcott in view of Bruno and Files. This rejection is traversed.

The Office action contends that Westcott “discloses substantially the features of the apparatus as claimed.” Because, as discussed below, Westcott does not teach or suggest numerous features recited in claim 1, this contention is incorrect. First, Westcott does not disclose or suggest the instantly claimed “thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured so as to be contacted by the

liquid whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed.” Second, Westcott does not disclose or suggest the instantly claimed thermally conductive member that “extends into the lower fluid passageway so as to contact and be at the temperature of the liquid passing through the lower fluid passageway, and, as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid passageway to the upper portion, and from the upper portion through the lower fluid passageway past the thermally conductive member to the lower portion.” Third, Westcott does not disclose or suggest the instantly claimed “plate configured and situated in the interior space so as to divide the space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate.”

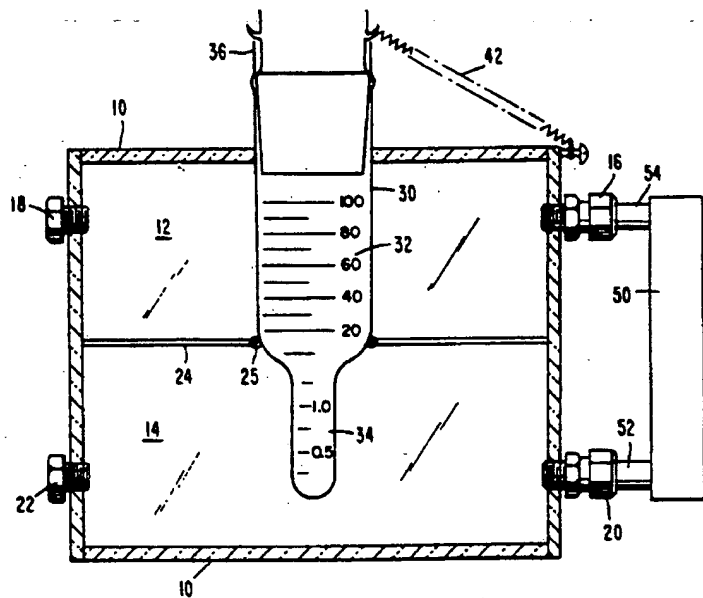
Applicant agrees with the admission in the Office action that the “apparatus of Westcott differs from the claimed invention in that claim 1, for example, recites a plate situated in the interior space so as to divide the space into an upper portion and a lower portion; and a thermally conductive member extending on an inside surface of a wall into the liquid.” Applicant further states that, in view of the previous paragraph, Westcott fails to provide, either expressly or by suggestion, at least three substantive features required by claim 1.

But, the contention in the Office action that Bruno fulfills the deficiencies of Westcott is traversed. The Office action contends that Bruno teaches “the concept of a partition plate dividing the concentrator into an upper and lower chamber.” For the Examiner’s convenience, Figure 1 of Bruno is reproduced below.

Incidentally, the Office action’s characterization of the subject recitation in claim 1 diverges substantially from the actual language of claim 1. Claim 1 recites “a plate configured and situated in the interior space so as to divide the space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate.” Even though Bruno shows a plate, this reference does not show disclose or suggest the instantly claimed plate, how to include such a plate, or any reason to include such a plate.

Bruno is understood to discuss, in the context of a chamber 10 and sealed plate 24, a vortex tube 50 with a cold air outlet 52 and a hot air outlet 54.

Applicant points out that Bruno's vortex tube, cold air outlet, and hot air outlet are not the instantly claimed "upper fluid passageway" or "lower fluid passageway." Both the hot and cold air outlets in Bruno are under positive pressure and discharge air into the upper portion 12 and lower portion 14,



respectively, of the chamber 10. In other words, the vortex tube 50 is not configured, and does not function, to allow the upper portion and the lower portion to "hydraulically communicate with each other." Even if (for the sake of argument) the vortex tube, hot air outlet, and cold air outlet allowed the upper portion 12 and lower portion 14 to "hydraulically communicate with each other" in some manner, the vortex tube, hot air outlet, and cold air outlet still do not provide the claimed upper fluid passageway and lower fluid passageway *defined by the plate*. Therefore, Bruno does not fulfill a substantial deficiency of Westcott and does not teach or suggest what the Office action contends it does.

Bruno uses an O-ring 25 to form a seal between the flask 30 and the dividing wall 24. Because this O-ring "ensure[s] sealing engagement between the flask and the dividing wall," col. 3, lines 24-25, the interface between the dividing wall and the flask does not, and cannot, allow the upper portion and the lower portion to "hydraulically communicate with each other" as required by claim 1. Even if (for the sake of argument) the O-ring 25 did not provide sealing engagement, the single hole in the dividing wall 24 through which the flask extends would not provide both "an *upper fluid passageway* and a *lower fluid passageway* defined by the plate." (Emphasis added.) In other words, Bruno does not fulfill another substantial deficiency of Westcott.

Bruno also appears to show that the dividing wall 24 is in sealing engagement with the side walls of the chamber 10. Therefore, no gaps appear to be provided between the dividing

wall and other walls that could define either an “upper fluid passageway” or a “lower fluid passageway” as recited by claim 1.

Therefore, Bruno fails to fulfill at least three substantial deficiencies of Westcott.

Bruno actually teaches away from any modification providing an “upper fluid passageway” or a “lower fluid passageway” as claimed. Bruno notes that “heating is undesirable since the cold finger section should be maintained at a cooler temperature to minimize bumping and decomposition of sensitive solutes.” Col. 1, lines 45-48. In addition, “heating is further undesirable since it applies an unfavorable temperature gradient opposing thermal solute transport.” Col. 1, lines 48-50. Bruno also includes an O-ring 25 to “ensure sealing engagement between the flask and the dividing wall.” Col. 3, lines 24-25. Modifying Bruno to allow the upper and lower chambers to hydraulically communicate with each other would allow the hot and cold air to mix, thereby destroying the temperature gradient and rendering Bruno’s apparatus inoperative. Therefore, not only does Bruno not disclose or suggest the claimed “upper fluid passageway” or “lower fluid passageway,” Bruno teaches away from any modification that would allow their incorporation.

Furthermore, Bruno also does not teach or suggest the instantly claimed “walls, including a heated wall, and a cover that collectively define an interior space in which a liquid is contained as the liquid is being heated in the pot for a distillation purpose, the walls and cover having respective inside surfaces” as recited in claim 1.

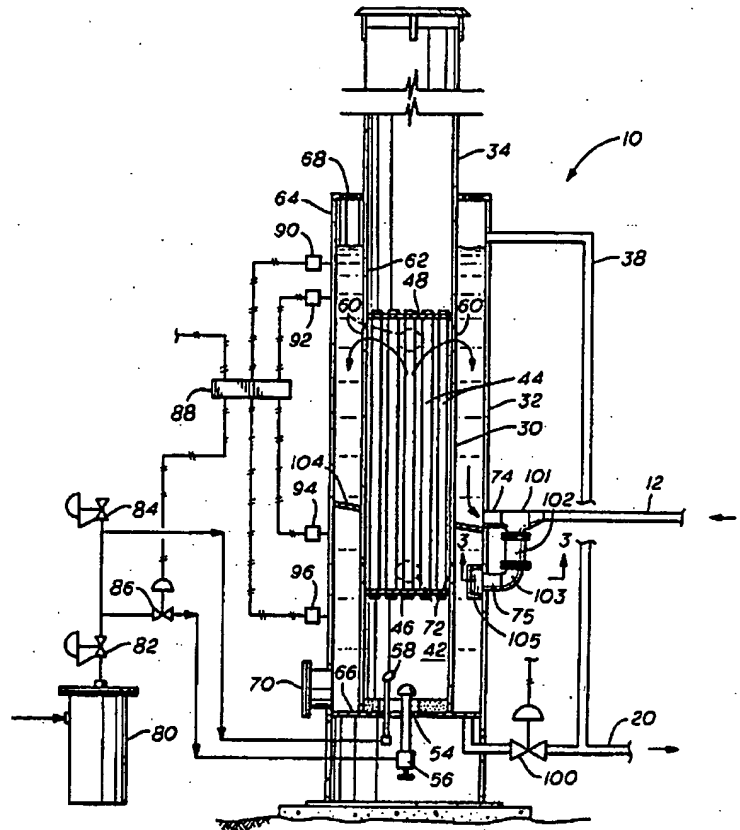
Furthermore, Bruno does not teach or suggest the instantly claimed “thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured so as to be contacted by the liquid whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed,” as recited by claim 1.

Finally, Bruno does not teach or suggest a thermally conductive member that “extends into the lower fluid passageway so as to contact and be at the temperature of the liquid passing through the lower fluid passageway, and, as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid passageway to the upper portion, and from the upper portion through the lower fluid passageway past the thermally conductive member to the lower portion” as recited by claim 1.

Therefore, claim 1 and its dependents are properly allowable over any combination of Westcott and Bruno.

The Office action appears to contend that Files fulfills one of the deficiencies of Westcott and Bruno by teaching "providing a thermally conductive member, i.e., a thermosyphon means."

This contention is traversed. Claim 1 recites in part "a thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured so as to be contacted by the liquid whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall, adjacent to the location on the inside surface, at which the temperature of the liquid can be sensed." For the Examiner's convenience, Figure 4 from Files is included, in part, above.



Files is understood to discuss a thermosyphon in which brine is heated and circulated through various chambers and pipes. It is unclear whether the Examiner considers the thermosyphon to be the brine itself or the vessels containing the brine. Regardless, the brine itself is not a thermally conductive member as recited by claim 1. Claim 1 recites "a thermally conductive member extending from a location on an inside surface of a wall *into the liquid*." (Emphasis added.) Because the brine *is* the liquid, it clearly cannot extend *into* the liquid. Therefore the brine is not, and cannot be, the thermally conductive member recited by claim 1.

Further, in Files the pipes containing the brine are not a thermally conductive member as recited by claim 1. Claim 1 recites "walls, including a heated wall, and a cover that collectively define an interior space in which a liquid is contained." Because the walls define the space within which the liquid is contained, the various chambers and pipes could be analogized to a "wall." But, claim 1 further recites "a thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured so as to be contacted by the liquid

whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall, adjacent to the location on the inside surface, at which the temperature of the liquid can be sensed.” Files’ chambers and pipes cannot be both a wall and a thermally conductive member which extends from “an inside surface of a wall . . . to a corresponding location outside the wall.” Therefore, neither the brine nor the pipes containing the brine are, or can be, the claimed thermally conductive member, and neither can function as the claimed thermally conductive member.

Nothing in Files teaches or suggests a thermally conductive member, much less a thermally conductive member that “extends into the lower fluid passageway so as to contact and be at the temperature of the liquid passing through the lower fluid passageway, and, as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid passageway to the upper portion, and from the upper portion through the lower fluid passageway past the thermally conductive member to the lower portion,” as recited by claim 1.

Further, Files does not have “a plate configured and situated in the interior space so as to divide the space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate.”

Because no conceivable combination of Westcott, Bruno, and Files teaches or suggests the combination of features recited in claim 1, this claim is properly allowable over these references.

Claim 24 is properly allowable over any conceivable combination of Westcott, Bruno, and Files for reasons as discussed above regarding claim 1. For example, no combination of Westcott, Bruno, and Files teaches or suggests an “interior-space-dividing means for dividing the interior space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid-passageway means and a lower fluid-passageway means.” Westcott and Files disclose no such means, and Bruno's dividing wall forms two chambers that do not, and cannot, “hydraulically communicate with each other by an upper fluid-passageway means and a lower fluid-passageway means.” In fact, Bruno teaches away from including any means that would allow hydraulic communication between the upper and lower chambers because providing such a means would render the Bruno apparatus inoperative, as discussed above.

Furthermore, none of Westcott, Bruno, and Files teaches or suggests a “thermal-conduction means extending from a location on an inside surface of a wall means into the liquid



and configured so as to be contacted by the liquid whenever liquid is in the interior space and is being heated for distillation and to serve as a direct thermal connection from the liquid to a corresponding location outside the wall means, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed.” Neither Westcott nor Bruno provides such means, and in Files neither the brine nor the pipes containing the brine provide such a thermal-conduction means, as discussed above.

Because none of Westcott, Bruno, and Files teaches or suggests a thermal-conduction means, they certainly do not suggest a thermal-conduction means that “extends into the lower portion and lower fluid-passageway means so as to contact and be at the temperature of the liquid passing through the lower fluid-passageway means, and, as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid-passageway means to the upper portion, and from the upper portion through the lower fluid-passageway means past the thermal-conduction means to the lower portion.”

Therefore, claim 24 is properly allowable over any conceivable combination of Westcott, Bruno, and Files.

The combination of Westcott, Bruno, and Files also fails to teach or suggest the combination of features recited in claim 25 for reasons similar to the discussion above regarding claim 1. For example, none of Westcott, Bruno, and Files teaches or suggests “a plate configured and situated in the interior space so as to divide the space into an upper portion and a lower portion that hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate.” No combination of Westcott and Files provides such structure. Bruno shows a dividing wall 24; but, for similar reasons as discussed above, the upper and lower portions of the chamber that are formed by the dividing wall cannot “hydraulically communicate with each other by an upper fluid passageway and a lower fluid passageway defined by the plate.” In fact, Bruno teaches away from any structure that would allow hydraulic communication between the upper and lower chamber because such a structure would render the Bruno apparatus inoperative, as discussed above.

Also, as discussed above, none of Westcott, Bruno, and Files teaches or suggests “a thermally conductive member extending from a location on an inside surface of a wall into the liquid and configured so as to be contacted by the liquid whenever the pot contains liquid being heated for distillation and to serve as a direct thermal connection from the liquid to a

corresponding location outside the wall, adjacent the location on the inside surface, at which the temperature of the liquid in the pot can be sensed.” Westcott and Bruno clearly provide no such structure. In Files, neither the brine nor the pipes containing the brine provide the claimed thermally conductive member, as discussed above regarding claim 1.

In addition, because none of Westcott, Bruno, and Files teaches or suggests a thermally conductive member, none of these references teaches or suggests that “the thermally conductive member extends into the lower fluid passageway so as to contact and be at the temperature of the liquid passing through the lower fluid passageway, and, as the liquid is being heated in the pot, the liquid circulates from the lower portion through the upper fluid passageway to the upper portion, and from the upper portion through the lower fluid passageway past the thermally conductive member to the lower portion.”

Therefore, claim 25 is properly allowable over any conceivable combination of Westcott, Bruno, and Files.

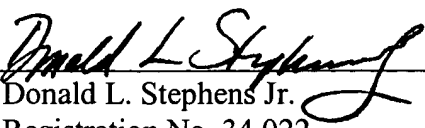
Because independent claims 1, 24, and 25 are in proper condition for allowance, the respective dependent claims are also properly allowable because each dependent claim includes all the features of the respective independent claim and because each dependent claim adds at least one feature that, in combination with the respective independent claim, is patentable in its own right over the cited references.

Applicant has a right to an interview at this stage of prosecution. If any issues remain unresolved after consideration of the contents of this paper, the Examiner is requested to contact the undersigned to schedule a telephonic interview. Any inaction by the Examiner to make such contact, followed by issuance of a final action, will be regarded as an acquiescence by the Examiner to grant an interview as a matter of right after the final action.

Respectfully submitted,

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